

CLAIMS

1. An apparatus (22,44) for use in generating configuration information for a computer system (12) employing hierarchical entities, the apparatus comprising:

means (42) for receiving a definition (24) of a high-level policy, for the configuration of the system, and permitted refinements to that policy, the definition referring to a plurality of the entities;

means (16) for storing information about the computer system and its environment including the entities, the hierarchy thereof and non-hierarchical relations between the entities; and

a processor (26) coupled to the receiving means and the storing means and operable to refine the high-level policy definition with reference to the permitted refinements thereto and the stored information about the entities to which the high-level policy definition relates in order to produce a refined policy definition deployable on the computer system.

2. An apparatus as claimed in claim 1, and including a user interface (28) with which a user (10) can interact with the apparatus.

3. An apparatus as claimed in claim 2, wherein the processor is operable, in accordance with the high-level policy definition, to present refinement options to the user *via* the user interface and to refine the high-level policy definition in dependence upon options selected by the user *via* the user interface.

4. An apparatus (22,44) for use in generating configuration information for a computer system (12) employing hierarchical entities, the apparatus comprising:

means (42) for receiving a definition (24) of a high-level policy, for the configuration of the system, and permitted refinements to that policy, the definition referring to a plurality of the entities;

a user interface (28) with which a user (10) can interact with the apparatus;

a processor (26) coupled to the receiving means and the user interface and operable, in accordance with the high-level policy definition, to present refinement information to the user

via the user interface so that a refined policy definition deployable on the computer system can be produced.

5. An apparatus as claimed in claim 4, wherein the processor is operable to present the refinement information to the user as refinement options and to refine the high-level policy definition in dependence upon options selected by the user *via* the user interface to produce the refined policy definition.

6. An apparatus as claimed in any of claims 2 to 5, and including a library (14) of policy templates (24), each template including a respective such high-level policy definition and respective such permitted policy refinements, the library being coupled to the receiving means, and a desired one or more of the policy templates being selectable by the user *via* the user interface for supply to the receiving means.

7. An apparatus as claimed in claim 6, wherein the policy templates have a common format.

8. An apparatus as claimed in claim 6 or 7 when dependent on claim 3 or 5, wherein the policy template format provides for each policy template to have a plurality of components executable in turn by the processor, at least one of the components being a flow directive and causing the processor to present such options to the user *via* the user interface and to jump to one of a plurality of the other components in dependence upon the flow directive and the selection made by the user *via* the user interface.

9. An apparatus as claimed in any of claims 1 to 3, or any of claims 6 to 8 when dependent thereon, wherein at least some of the entities stored in the storing means are abstract entities, the storing means also including, for each such abstract entity, a pointer to data in the computer system representing an instance of that abstract entity.

10. An apparatus as claimed in claim 9, wherein:

the refined policy is in terms of a policy context referring to unbound entities and a policy statement;

the apparatus includes means (20) for storing rules for interpreting the policy statement as instructions executable by the computer system; and

5 the processor (20) is operable, with reference to the entity storing means, to bind the unbound entities in the policy context to instances of those entities, and, with reference to the rule storing means, to interpret the policy statement into a series of instructions to the computer system referring to the bound instances or derivatives of them.

11. An apparatus (22,44) for use in generating configuration information for a computer
10 system (12), the apparatus comprising:

means (20) for receiving a policy (18), for the configuration of the computer system, in terms of a policy context referring to unbound entities and a policy statement;

means (16) for storing, for each of the unbound entities, a pointer to data in the computer system representing at least one instance of that entity;

15 means (20) for storing rules for interpreting the policy statement as instructions executable by the computer system; and

20 a processor (20) which is operable, with reference to the pointers, to bind the unbound entities in the policy context to instances of those entities, and, with reference to the interpretation rules, to interpret the policy statement into a series of instructions to the computer system referring to the bound instances or derivatives of them.

12. An apparatus as claimed in claim 10 or 11, wherein the processor is operable to determine a group of the bound instances, and at least one of the instructions refers to such a determined group.

13. An apparatus as claimed in claim 12, wherein the processor is operable to determine,
25 with reference to the entity storing means, whether such a determined group is already defined in the computer system and, if not, to generate such an instruction to create the determined group in the computer system.

14. A method for use in generating configuration information for a computer system employing hierarchical entities, the method comprising the steps of:

receiving a definition of a high-level policy, for the configuration of the system, and permitted refinements to that policy, the definition referring to a plurality of the entities; and

5 refining the high-level policy definition with reference to the permitted refinements thereto and stored information about the entities to which the high-level policy definition relates in order to produce a refined policy definition deployable on the computer system.

15. A method as claimed in claim 14, and including the steps of:

presenting refinement options, in accordance with the high-level policy definition, to the
10 user *via* a user interface; and

refining the high-level policy definition in dependence upon options selected by the user *via* the user interface.

16. A method for use in generating configuration information for a computer system employing hierarchical entities, the method comprising the steps of:

15 receiving a definition of a high-level policy, for the configuration of the system, and permitted refinements to that policy, the definition referring to a plurality of the entities;

presenting refinement information, in accordance with the high-level policy definition, to a user *via* a user interface so that a refined policy definition deployable on the computer system can be produced.

20 17. A method as claimed in claim 16, wherein the refinement information is presented to the user as refinement options, and further including the step of refining the high-level policy definition in dependence upon options selected by the user *via* the user interface to produce the refined policy definition.

18. A method as claimed in any of claims 14 to 17, and including the steps of:

25 providing a library of policy templates, each template including a respective such high-level policy definition and respective such permitted policy refinements; and

selecting one or more of the policy templates for refinement in accordance with input by the user *via* a user interface.

19. A method as claimed in claim 18, wherein the policy templates have a common format.

20. A method as claimed in claim 18 or 19 when dependent on claim 15 or 17, wherein the policy template format provides for each policy template to have a plurality of components executable in turn during refinement, at least one of the components being a flow directive and causing such options to be presented to the user *via* the user interface and the refinement process to jump to one of a plurality of the other components in dependence upon the flow directive and the selection made by the user *via* the user interface.

21. A method as claimed in claim 14 or 15, or any of claims 18 to 20 when dependent thereon, wherein:

10 the refined policy is in terms of a policy context referring to unbound entities and a policy statement;

the stored information about at least some of the entities relates to abstract entities, and includes, for each such abstract entity, a pointer to data in the computer system representing an instance of that abstract entity; and

15 the method further includes the steps of: binding, with reference to the stored information, the unbound entities in the policy context to instances of those entities; and interpreting, with reference for stored rules for interpreting the policy statement as instructions executable by the computer system, the policy statement into a series of instructions to the computer system referring to the bound instances or derivatives of them.

20 22. A method for use in generating configuration information for a computer system, the method comprising the steps of:

receiving a policy, for the configuration of the computer system, in terms of a policy context referring to unbound entities and a policy statement;

25 storing, for each of the unbound entities, a pointer to data in the computer system representing at least one instance of that entity;

storing rules for interpreting the policy statement as instructions executable by the computer system; and

binding, with reference to the pointers, the unbound entities in the policy context to instances of those entities; and

interpreting, with reference to the interpretation rules, the policy statement into a series of instructions to the computer system referring to the bound instances or derivatives of them.

23. A method as claimed in claim 21 or 22, further including the steps of determining a group of the bound instances, and referring to such a determined group in at least one of the
5 instructions.

24. An method as claimed in claim 23, further including the steps of: determining, with reference to stored information about the entities, whether such a determined group is already defined in the computer system; and, if not, generate such an instruction to create the determined group in the computer system.